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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,008	03/15/2004	Noriya Hayashi	080542-0166	6818

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EXAMINER	
GILLESPIE, BENJAMIN	
ART UNIT	PAPER NUMBER
1796	
MAIL DATE	DELIVERY MODE
10/27/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/800,008	HAYASHI ET AL.	
	Examiner	Art Unit	
	BENJAMIN J. GILLESPIE	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-12,16-18 and 21-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-12,16-18 and 21-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

2. Currently there are two sets of claims 21 and 22, correction is required. In the instant office action, the examiner has addressed the second set of claims 21 and 22, as claims 23 and 24 respectively.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 21-24 are rejected because no relative temperature basis has been given; the claimed values will differ depending on what temperature the measurements are recorded at.

Claim Rejections - 35 USC § 102/103

The following is a quotation of 35 U.S.C. 103(a) and 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 4-5, 10-11, 17, and 21-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heine ('064) as evidenced by Hans et al ('438). Heine teaches a fiber reinforced thermosetting polyurethane composition comprising the reaction product of polyol and polyisocyanate (Abstract; col 1 lines 9-11; col 3 lines 8-24). In particular patentee teaches that the composition may contain up to 75% by weight of polypropylene glycol, which has an average molecular weight ranging from 62 to 400, and the polyisocyanate is present relative to the polyol in a NCO:OH ratio of 0.9:1 to 1.1:1 (col 3 lines 18-21, 22-24; col 4 lines 21-28; col 6 lines 16, 27-28). Regarding applicants' "isocyanate being liquid at room temperature" limitation, Heine et al teach polyisocyanates exhibit a viscosity of 150 mPa.s at 25°C and may furthermore comprise biurets, which are liquid at room temperature as exemplified by Hans et al (Heine et al; col 7 lines 1-2; col 10 lines 55-57; Hans et al; col 3 lines 61-63; col 4 lines 12-14).

5. Regarding the claimed amounts of fibrous material, Heine explains that said material may be present by 20 to 90% by weight based on the total composition, and although this is not in terms of volume percentage, based on the breadth of the disclosed and claimed ranges, the position is taken that Heine inherently satisfies the claimed range (Col 3 lines 14-16). Regarding the method of claims 6, and 20, as well as the "shape memory" limitation, patentee explains the fibrous material is impregnated with an uncured polyurethane resin, which is then cured. The resulting polyurethane can then be reheated thereby allowing the polyurethane to be reshaped (Col 7 lines 45-62, 67-68; col 8 lines 1-5). Patentees go on to teach the resulting polyurethane is useful in producing "multilayer laminate[s]" (Col 8 lines 49-54).

6. Finally, while it is noted that Heine fail to disclose glass transition temperatures or pot life, the examiner takes the position that claims 4, 17, and 22 are satisfied since Heine would inherently exhibit the same properties based on the logic that when the prior art discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently posses properties which anticipate or render obvious the claimed invention but has basis for shifting the burden of proof to appellant as in In re Fitzgerald, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon appellant to provide clear and convincing factual evidence that the respective products do in fact differ. In re Fitzgerald, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). MPEP 2112-2112.02.

7. Claims 6-9, 12, 16, 18, and 23-24 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heine ('064) as evidenced by Hans et al ('438). Heine teaches a fiber reinforced thermosetting polyurethane composition comprising the reaction product of polyol and polyisocyanate (Abstract; col 1 lines 9-11; col 3 lines 8-24). In particular patentee teaches that the composition may contain up to 75% by weight of polypropylene glycol, which has an average molecular weight ranging from 62 to 400, and the polyisocyanate is present relative to the polyol in a NCO:OH ratio of 0.9:1 to 1.1:1 (col 3 lines 18-21, 22-24; col 4 lines 21-28; col 6 lines 16, 27-28). Regarding applicants' "isocyanate being liquid at room temperature" limitation, Heine et al teach polyisocyanates exhibit a viscosity of 150 mPa.s at 25°C and may furthermore comprise biurets, which are liquid at room temperature as exemplified by Hans et al (Heine et al; col 7 lines 1-2; col 10 lines 55-57; Hans et al; col 3 lines 61-63; col 4 lines 12-14).

8. Regarding the claimed amounts of fibrous material, Heine explains that said material may be present by 20 to 90% by weight based on the total composition, and although this is not in terms of volume percentage, based on the breadth of the disclosed and claimed ranges, the position is taken that Heine inherently satisfies the claimed range (Col 3 lines 14-16). Regarding the method of claims 6, and 20, as well as the "shape memory" limitation, patentee explains the fibrous material is impregnated with an uncured polyurethane resin, which is then cured. The resulting polyurethane can then be reheated thereby allowing the polyurethane to be reshaped (Col 7 lines 45-62, 67-68; col 8 lines 1-5). Patentees go on to teach the resulting polyurethane is useful in producing "multilayer laminate[s]" (Col 8 lines 49-54).

9. Finally, it is noted that Heine is silent in disclosing the glass transition temperatures of the resulting polyurethane, nevertheless when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim it is appropriate for the examiner to make a rejection under both the applicable section of 35 U.S.C. 102 and 35 U.S.C. 103 such that the burden is shifted to applicant to provide clear and convincing factual evidence that the respective products do in fact differ in kind. *In re Brown,* 59 CCPA 1063, 173 USPQ 685 (1972); *In re Fessman,* 180 USPQ 324 (CCPA 1974).

Note

10. Due to an inadvertent oversight, claim 9 was not included in the 102/103 rejection set forth in the non-final office action mailed 6/4/2008. However, the instant office action does not constitute a new grounds of rejection as the office action summary mailed with said non-final shows that claim 9 was in rejected status, and Heine clearly addresses the claimed subject material.

Response to Arguments

11. Applicant's arguments with respect to claims 4-12, 14-18, 21-24 have been considered but are not persuasive. Applicants' argue that the claimed invention is not anticipated nor rendered obvious by Heine et al ('064) because patentees fail to teach the claimed composition, and in particular the limitation "wherein the polyol does not comprise a chain extender." As a result the polyurethane of Heine would not exhibit the claimed glass transition temperature or pot life. In response, it is noted that Heine refers to the relied upon polypropylene glycol as a "chain-extender," however, to the extent that the polyol is limited by claims 4 and 6, applicants' invention is not patentably distinct over the prior art.

12. The examiner notes that applicants' polyol listed in claims 4 and 6 is not a "chain-extender." However, said polyol is only limited to a specific molecular weight range and NCO:OH equivalent ratio, both of which are satisfied by the polypropylene glycol of Heine. Hence, applicants have not established the prior art would fail to result in the *claimed* invention; the fact that Heine refers to polypropylene glycol as a "chain-extender" is pure semantics.

13. Furthermore, the examiner would like to add that although the polypropylene glycol of Heine may have a molecular weight as high as 400, patentees clearly teach a *range* of molecular weights that completely overlap applicant's claimed range.

14. Applicants also argue that the polyurethane of Heine would fail to yield in the claimed invention since "it is not generally known in the art that… a novolak resin has a shape memory function," and the presence of the novolak resin would fail to "teach or suggest [a] polyurethane composition [that] has a glass transition point of at least 70°C." However, both of these positions are unsubstantiated opinions that have not been supported by any type of factual data clearly

showing the presence of novolak resin would fail to produce the claimed properties. Furthermore, the examiner would like to point out that applicants' currently claimed invention does not *exclude* the presence of novolak resin.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

16. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

B. Gillespie